

PROJECT APPLICATION FORM

FOR

PM2.5 INTERAGENCY CONSULTATION

**Highway 101 Greenbrae/Twin Cities Corridor Improvement
Project**

Submitted to: Metropolitan Transportation Commission

Submitted by: Transportation Authority of Marin

Date Submitted: August 8, 2011

Application of Criteria for a Project of Air Quality Concern

Project Title: US 101 Greenbrae Improvement Project

Project Summary for Air Quality Conformity Task Force Meeting: (August 25, 2011)

Description

- Proposed improvements between Tamalpais Drive and Sir Frances Drake Boulevard in the Town of Corte Madera, Community of Greenbrae, and City of Larkspur.
- Auxiliary lanes proposed along US 101 mainline
- Existing unconventional interchange has 19 legs
- Proposed interchange improves connections to/from US 101 and nearby roadways, and between the nearby shopping district west of US 101 and the hotels, restaurants, and other businesses east of US 101
- New southbound ramp configuration will improve weave/merge on southbound US 101
- Standardized interchange configuration will improve traffic flow and vehicle speeds at nearby intersections

Background

- Project Study Report complete
- NEPA process for Initial Study/Environmental Assessment (IS/EA) in process
- Public review for IS/EA ends Spring 2012
- No comments received on air quality thus far
- Seeking air quality conformity determination on or before August 2011

Not a Project of Air Quality Concern (40 CFR 93.123(b)(1))

(i) New or expanded highway projects with significant number/increase in diesel vehicles?

- Not a new or expanded highway project
- Auxiliary lanes proposed along US 101 mainline
- No change in traffic volume or truck percentages on US 101

(ii) Affects intersections at LOS D, E, or F with a significant number of diesel vehicles?

- Diesel vehicles represent 2% of intersection traffic volume
- Intersections at LOS D, E, or F improve, and delays decrease (2035)
- No project changes to land use that would affect diesel traffic percentage

(iii) New bus and rail terminals and transfer points?—Not Applicable

(iv) Expanded bus and rail terminals and transfer points?—Not Applicable

(v) *Affects areas identified in PM_{10} or $PM_{2.5}$ implementation plan as site of violation?*

- No state implementation plan for $PM_{2.5}$ (due by December 2012);
- Therefore, not identified in plan as an area of potential violation
- Nearest PM_{10} or $PM_{2.5}$ violations in 2007 in Redwood City, 10 miles southeast

PM_{2.5} Project Assessment Form for Interagency Consultation

RTIP ID# <i>(required)</i> 21325				
TIP ID# <i>(required)</i> MRN05001				
Air Quality Conformity Task Force Consideration Date August 25, 2011				
Project Description <i>(clearly describe project)</i> <p>The proposed project is located along U.S. Highway 101 within the Greenbrae Corridor in the town of Corte Madera, the city of Larkspur, and the community of Greenbrae, California. The southbound improvements for the proposed project consist of widening and realigning the existing southbound on-ramp from Sir Francis Drake Boulevard to merge onto southbound U.S. Highway 101 south of Fifer Avenue. The southbound Fifer Avenue on-ramp would merge with the southbound on-ramp from Sir Francis Drake Boulevard prior to merging onto southbound U.S. Highway 101. The existing southbound hook on- and off-ramps to southbound U.S. Highway 101 at Fifer Avenue would be removed. The existing bus stop at the Lucky Drive/Fifer Avenue off-ramp would be replaced by two new bus stops: one at the Sir Francis Drake Boulevard off-ramp terminus and one on the west side of the realigned Fifer Avenue on-ramp to the collector-distributor road.</p> <p>The northbound improvements consist of new northbound U.S. Highway 101 on- and off-ramps at Wornum Drive using a half diamond configuration. The existing northbound Sir Francis Drake Boulevard off-ramp would be realigned and the exit point would be relocated approximately 200 feet south of the existing Wornum Drive undercrossing. Northbound traffic traveling to Sir Francis Drake Boulevard would exit U.S. Highway 101 just north of Wornum Drive, cross over the northbound Wornum Drive on-ramp, and continue north along a collector-distributor road to Industrial Way and Sir Francis Drake Boulevard. The existing northbound hook off-ramp at Industrial Way would be removed, and the existing northbound hook on-ramp would be modified to merge into the new one-way collector-distributor road that extends to Sir Francis Drake Boulevard.</p>				
Type of Project: <i>Pick one project type:</i> Change to existing State highway				
County Marin	Narrative Location/Route & Postmiles Located in Central Marin County on US 101 from PM 7.2 to PM 8.9 Caltrans Projects – EA# 1A660K (PSR)			
Lead Agency: Caltrans District 4				
Contact Person Bill Whitney	Phone# (415) 226-0823	Fax# (415) 226-0816	Email	
Federal Action for which Project-Level PM Conformity is Needed <i>(check appropriate box)</i>				
Categorical Exclusion (NEPA)	X EA or Draft EIS	FONSI or Final EIS	PS&E or Construction	Other
Scheduled Date of Federal Action: December 2012				
NEPA Delegation – Project Type <i>(check appropriate box)</i>				
Exempt	Section 6004 – Categorical Exemption	X Section 6005 – Non- Categorical Exemption		
Current Programming Dates <i>(as appropriate)</i>				
	PE/Environmental	ENG	ROW	CON
Start	2007	01/2013	01/2013	01/2015
End	12/2012	04/2014	09/2014	10/2016

Project Purpose and Need (Summary): *(please be brief)*

The purpose of the proposed project is described below.

- To reduce congestion on the US 101 mainline between Sir Francis Drake Boulevard and Tamalpais Drive,
- To enhance regional and local connectivity for vehicles from I-580 traveling westbound on East Sir Francis Drake Boulevard to southbound US 101 and local roads south of Corte Madera Creek.
- Improve local and regional access by separating local and US Highway 101 mainline traffic.
- To improve access to local and regional multi-modal facilities.

The Need for the Project is described as follows:

- During the peak travel periods, 6:00 AM – 10:00 AM and 3:00 PM – 7:00 PM, the existing roadway capacity is not adequate to meet current demand, leading to congestion on both US Highway 101 and Sir Francis Drake Boulevard.
- There are two locations on US Highway 101 where closely spaced on- and off-ramps exacerbate the congestion. To either exit or enter the highway drivers must weave at the following locations: o Northbound US Highway 101 between the on-ramp at Industrial Way and the off-ramp at Sir Francis Drake Boulevard; Southbound US Highway 101 between the on-ramp from Sir Francis Drake Boulevard and the off-ramp at Fifer Avenue.
- The collision rate for northbound US Highway 101 along the Greenbrae Corridor exceeds the statewide average for similar roadways and traffic conditions. Approximately 68% of the accidents are rear ends, which are common in stop and go traffic conditions. The second most frequent accident type is side-swipes, approximately 19%, which can occur during lane changes as traffic enters and exits the highway. Nearly 75% of collisions occur during the PM peak travel period.
- Access to multi-modal facilities, such as the Larkspur Ferry Terminal and multi-use paths, is constrained by the limited connectivity across Corte Madera Creek, as well as the east and west sides of US 101. These corridors are heavily used by pedestrians and bicyclists to reach local and regional transit facilities along the corridor. In addition, existing bicycle and pedestrian projects, such as the Central Marin Ferry Connection and the Cal Park Tunnel, would not have their full potential realized without improved connectivity within the study area.

Surrounding Land Use/Traffic Generators *(especially effect on diesel traffic)*

Surrounding land use consists of residents, hotels, parks and recreation areas, hospitals, places of worship, public facilities, and commercial development. The main traffic generators in the study area are automobiles with minimal (2.6 percent) trucks.

Brief summary of assumptions and methodology used for conducting analysis *(please keep this concise – specifics may include date of when traffic counts were conducted, studies where truck percentages were derived)*

Traffic data was collected in the fall of 2006 as part of our initial context sensitive design effort with the community. In 2010 additional data was collected to verify and compare traffic data as part the Traffic Operations Report

Opening Year: If facility is a highway or street, Build and No Build LOS, AADT, % and # trucks, truck AADT of proposed facility

RTP Horizon Year / Design Year: If facility is a highway or street, Build and No Build LOS, AADT, % and # trucks, truck AADT of proposed facility

PM_{2.5} Project Assessment Form for Interagency Consultation

Opening Year: If facility is an interchange(s) or intersection(s), Build and No Build cross-street AADT, % and # trucks, truck AADT
see Figures and Tables attached.

RTP Horizon Year / Design Year: If facility is an interchange (s) or intersection(s), Build and No Build cross-street AADT, % and # trucks, truck AADT
see Figures and Tables attached.

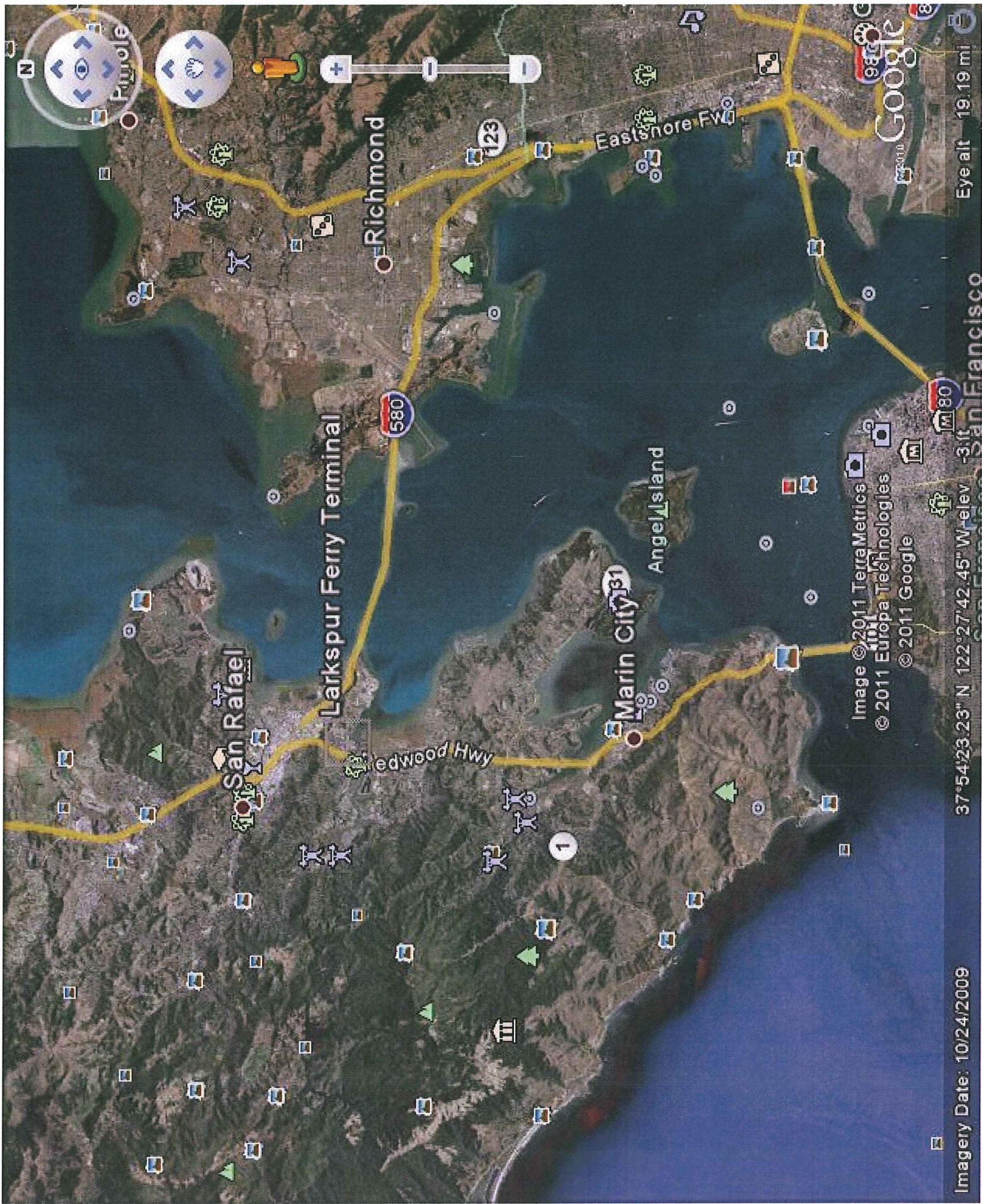
Opening Year: If facility is a bus, rail or intermodal facility/terminal/transfer point, # of bus arrivals for Build and No Build, % and # of bus arrivals will be diesel buses

RTP Horizon Year / Design Year: If facility is a bus, rail or intermodal facility/terminal/transfer point, # of bus arrivals for Build and No Build, % and # of bus arrivals will be diesel buses

Describe potential traffic redistribution effects of congestion relief (*impact on other facilities*)
The corridor segment between Sir Francis Drake Boulevard (Greenbrae Interchange) and the Tamalpais Drive Interchange currently experiences major traffic congestion in the a.m. and p.m. In addition, there is currently no direct access to Wornum Drive from highway 101. Therefore, the reconfiguration of existing interchanges will reduce congestion along Highway 101 and at the interchanges within the study area, which in turn will lower emissions.

Comments/Explanation/Details (*please be brief*)

The Proposed project is not considered a project of air quality concern (POAQC) for the federal and state PM_{2.5} standard and the state PM₁₀ standard, because it does not meet the definition of a POAQC as defined in the EPA's Transportation Conformity Guidance. Therefore, PM_{2.5} and PM₁₀ hot spot analyses are not required.

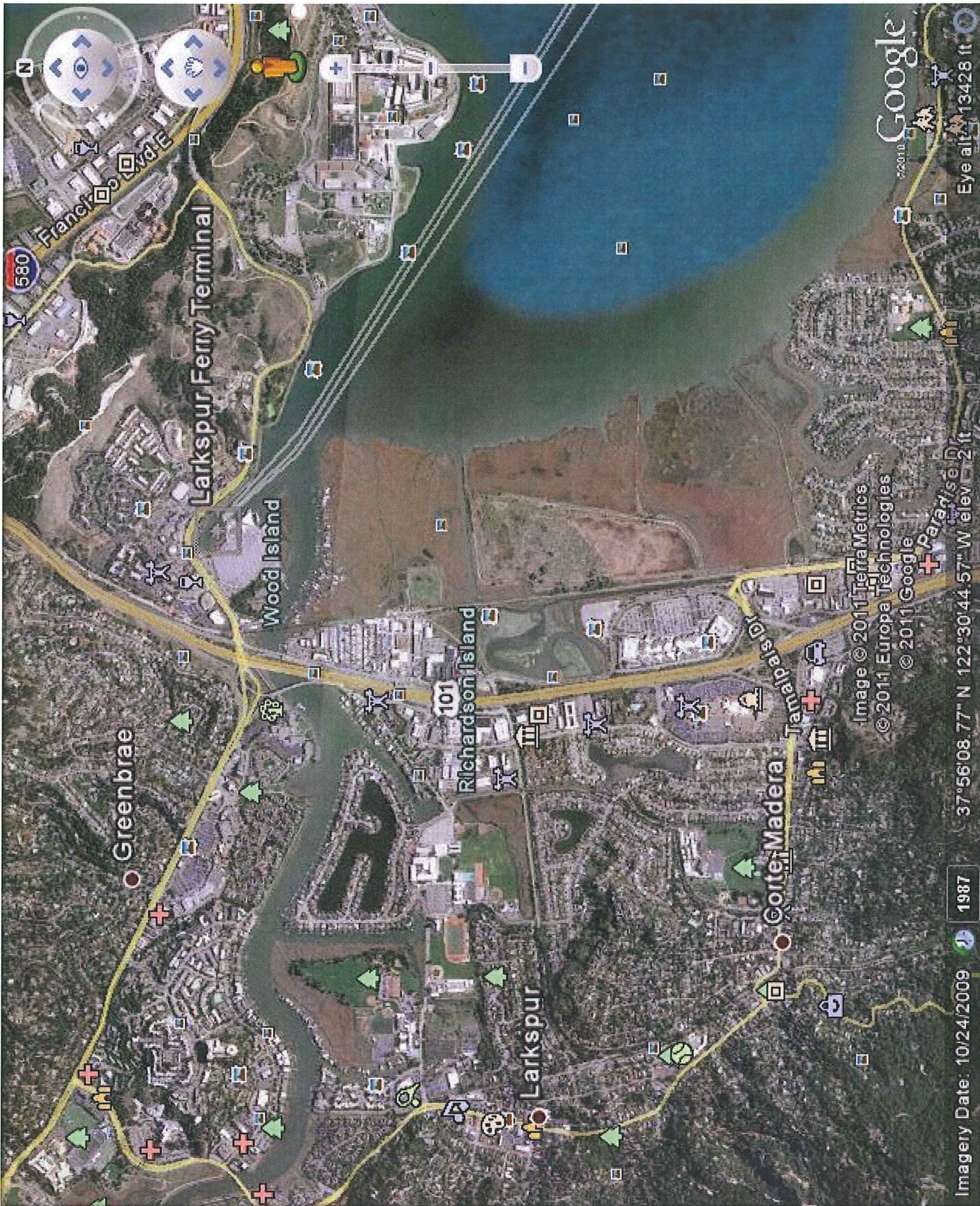


Imagery Date: 10/24/2009

37°54'23.23" N 122°27'42.45" W elev -3 ft

San Francisco

Eye alt 19.19 mi



580
Francisco Blvd E
Larkspur Ferry Terminal
Wood Island
Richardson Island
101
Larkspur
Corte Madera
Tammen
Greenbrae
Image © 2011 TerraMetrics
© 2011 Europa Technologies
© 2011 Google
Eye alt: 13428 ft
Imagery Date: 10/24/2009
1987
37°56'08.77" N 122°30'44.57" W elev 12 ft

END PROJECT
PM 8.9

GREENBRAE

Sir Francis Drake Blvd
Drakes Landing Rd
Via La Cumbre
Elsie Dr
Bretano Way

LARKSPUR

Corte Madera Creek
Lucky Dr
Nellen Ave
Wornum Dr
Tamal Vista Blvd
Madera Blvd
Lakeside Dr
Tamalpais Dr

CORTE MADERA

Corte Madera Channel
Shorebird Marsh
State Ecological Reserve

PROJECT LIMITS

BEGIN PROJECT
PM 7.2

US 101
Paradise Dr
San Clemente Dr

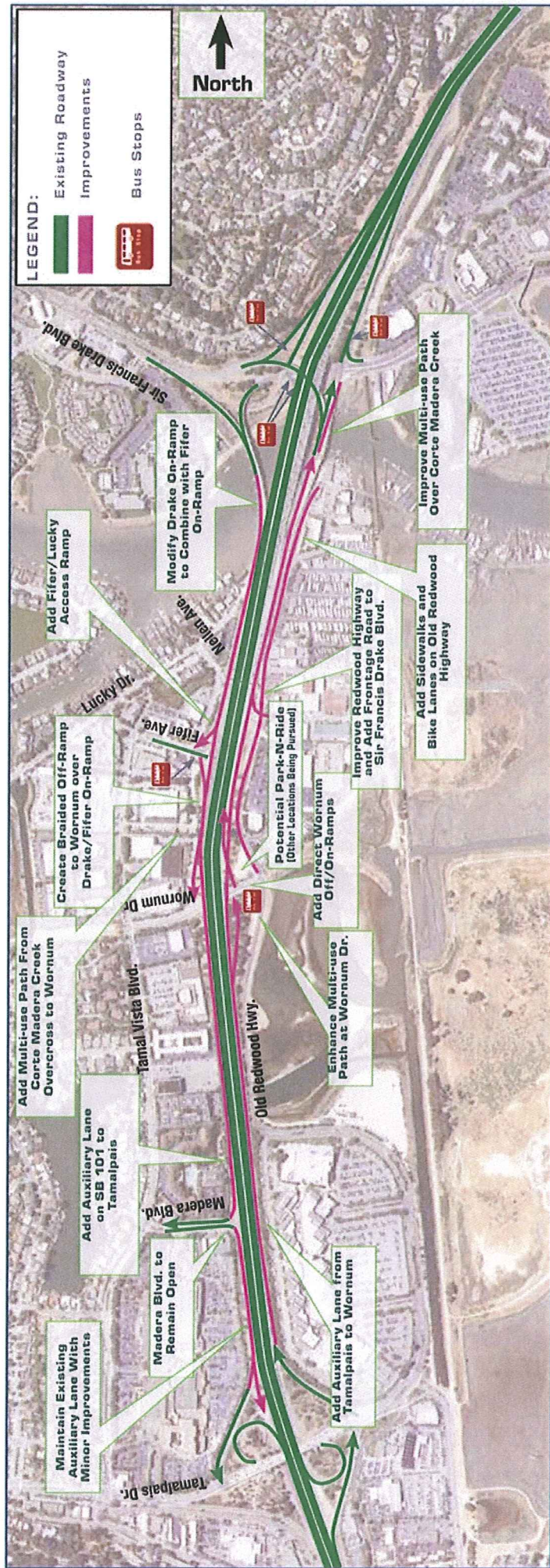
And: 0.3 miles north of the Corte Madera Creek Overcrossing

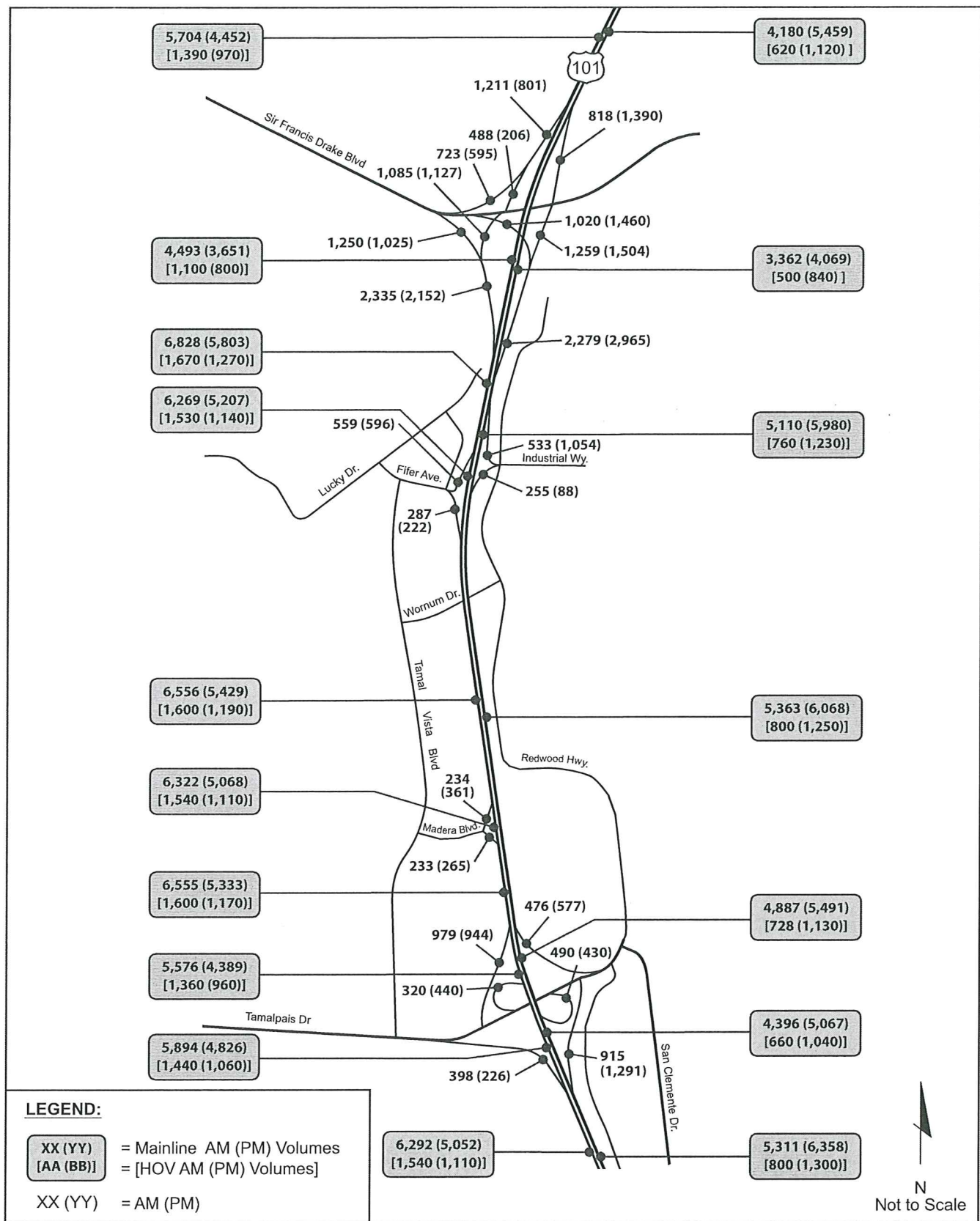
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Proposed Project Improvements





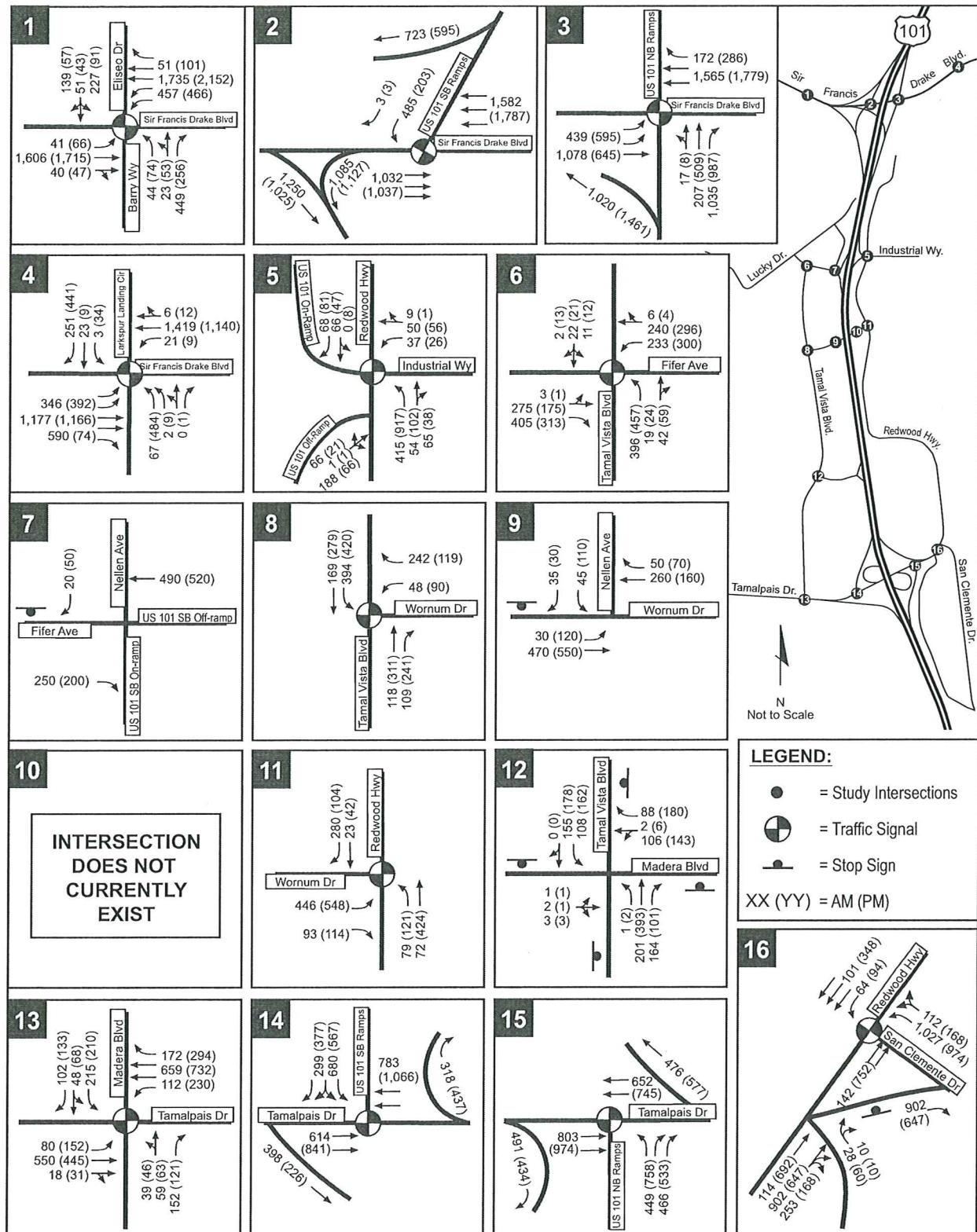
FEHR & PEERS
TRANSPORTATION CONSULTANTS

May 2009
SF08-0386\graphics\0386-2 existing

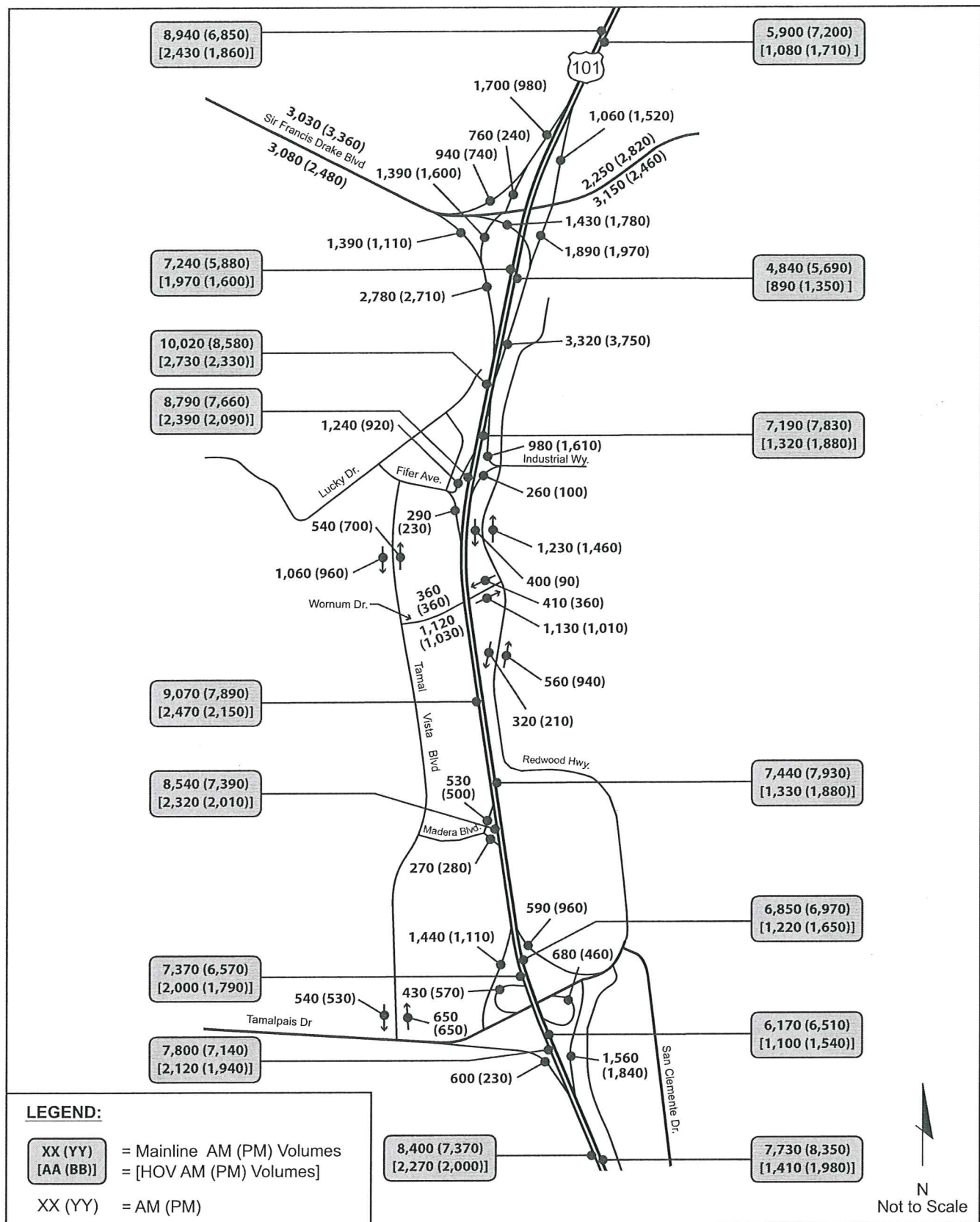
Highway 101 Greenbrae Project

EXISTING AM AND PM PEAK HOUR MAINLINE AND RAMP VOLUMES

FIGURE 2



Highway 101 Greenbrae Project



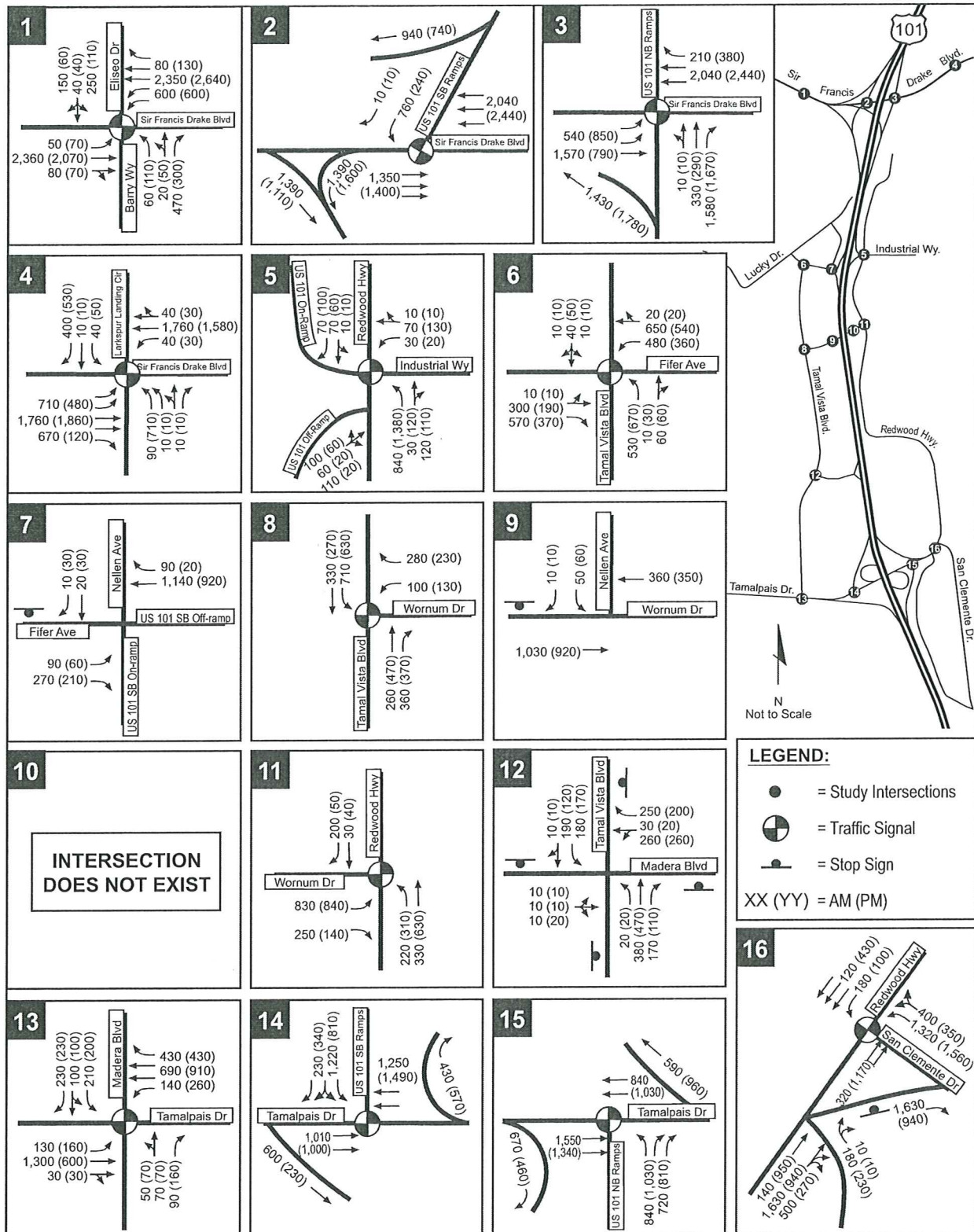
FEHR & PEERS
TRANSPORTATION CONSULTANTS

July 2009
SF08-0386\graphics\0386-5 y2035 nb

Highway 101 Greenbrae Project

CUMULATIVE YEAR (2035) NO-BUILD PEAK HOUR MAINLINE AND RAMP DEMAND VOLUMES

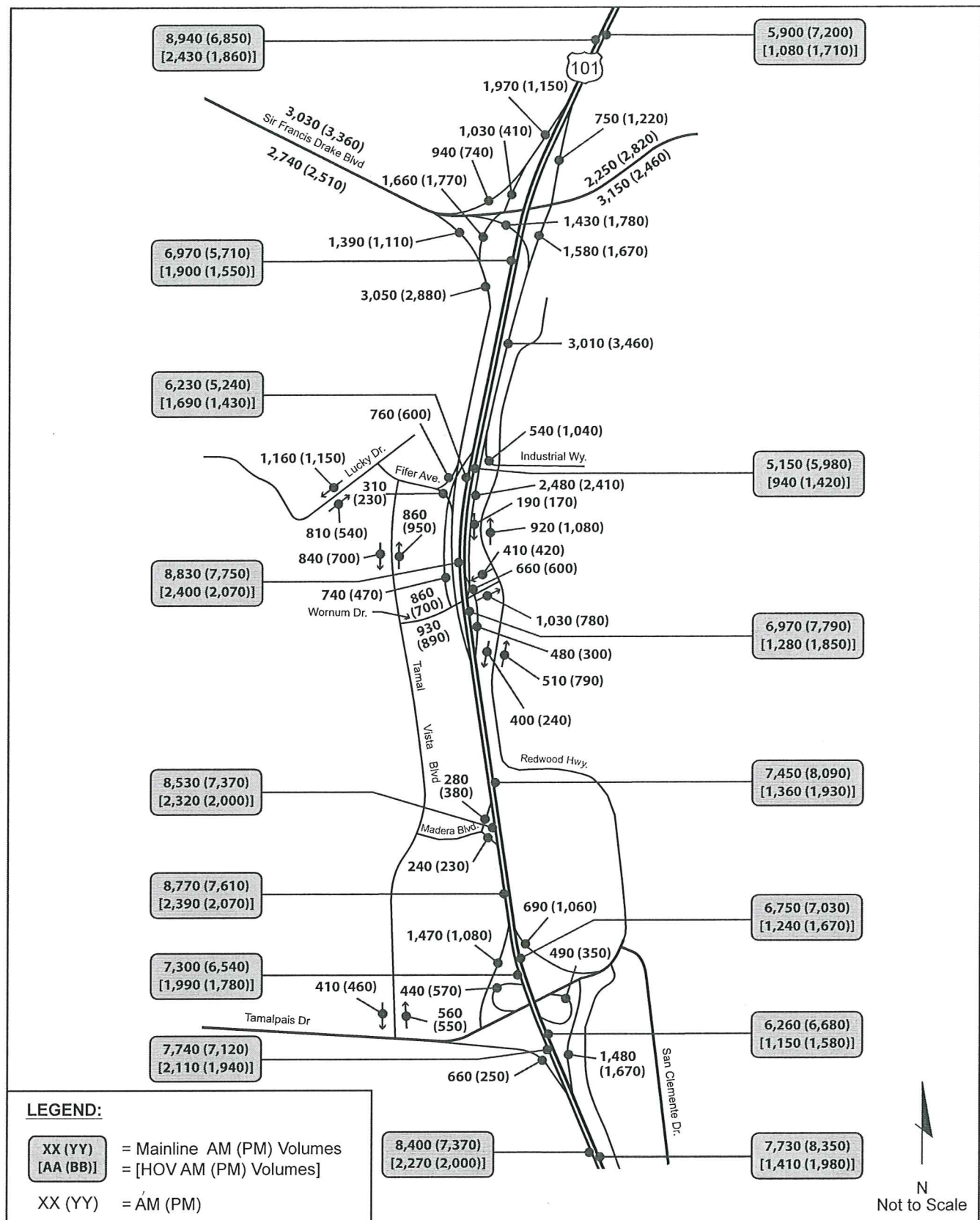
FIGURE 5

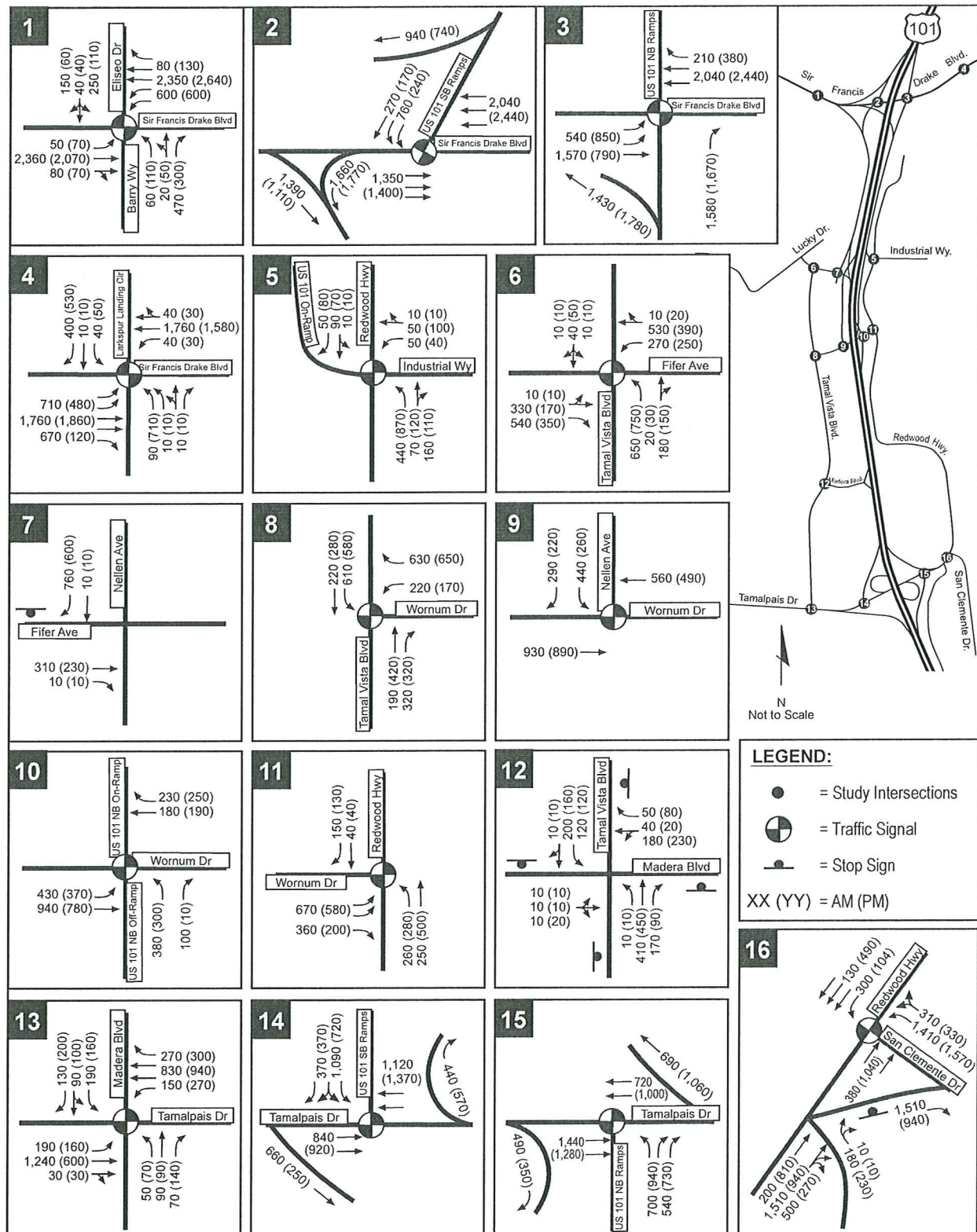


Highway 101 Greenbrae Project

CUMULATIVE YEAR (2035) NO-BUILD PEAK HOUR INTERSECTION VOLUMES

FIGURE 10





Highway 101 Greenbrae Project

TABLE 1
FREEWAY RAMP TERMINAL INTERSECTIONS INTERSECTION LEVELS OF SERVICE

AM Peak Hour

Intersection	Existing		No-Build		Proposed Project	
	Delay	LOS	Delay ¹	LOS	Delay	LOS
US-101 Southbound Ramps / Sir Francis Drake Blvd	14	B	35	C/D		
US-101 Northbound Ramps / Sir Francis Drake Blvd	33	C	35	C/D		
US-101 Northbound Ramps / Redwood Hwy/Industrial Way	< 10	A	< 10	A		
Tamalpais Dr / US-101 Southbound Ramps ³	13	B	20	B/C		
Tamalpais Dr / US-101 Northbound Ramps ⁴	12	B				

PM Peak Hour

Intersection	Existing		No-Build		Proposed Project	
	Delay	LOS	Delay	LOS	Delay	LOS
US-101 Southbound Ramps (east) / Sir Francis Drake Blvd	12	B	20	B/C		
US-101 Northbound Ramps / Sir Francis Drake Blvd	49	D	35	C/D		
US-101 Northbound Ramps / Redwood Hwy/Industrial Way	22	C	10	A/B		
Tamalpais Dr / US-101 Southbound Ramps ³	12	B	15	B		
Tamalpais Dr / US-101 Northbound Ramps ³	13	B	55	D/E		

Note: **Bold** = unacceptable LOS

1. Average control delay in seconds per vehicle and corresponding LOS for signalized intersections. Results based on the average of ten of twenty model runs with different random seed numbers.

Source: Fehr & Peers, August 2010

**TABLE 2
AM PEAK HOUR MAINLINE SEGMENT AND RAMP VOLUMES**

Northbound US-101			
Segment / Ramp	Existing	No-Build	Proposed Project
<i>Mainlines</i>			
Between Edge of study area and Tamalpais Drive	5,311	7,730	7,730
Between Tamalpais Drive and Industrial Way / Wornum Drive	5,363	7,440	7,450
Sir Francis Drake Interchange (across Corte Madera Creek)	3,362	4,840	5,150
Between Sir Francis Drake and I-580 Off-Ramp	4,180	5,900	5,900
<i>Ramps</i>			
Tamalpais Off-Ramp	915	1,560	1,480
Tamalpais On-Ramp	966	1,270	1,180
Industrial / Wornum Off-Ramp	255	260	480
Wornum On-Ramp	N/A	N/A	660
Sir Francis Drake Off-Ramp	2,279	3,320	3,010
Sir Francis Drake On-Ramp	818	1,060	750
Southbound US-101			
Segment / Ramp	Existing	No-Build	Proposed Project
<i>Mainlines</i>			
Anderson Drive On-Ramp and Sir Francis Drake	5,704	8,940	8,940
Sir Francis Drake Interchange (across Corte Madera Creek)	4,493	7,240	6,970
Between Fifer/Wornum and Madera	6,556	9,070	8,830
Between Madera and Tamalpais	6,555	8,810	8,770
Between Tamalpais and Edge of study area	6,292	8,400	8,400
<i>Ramps</i>			
Sir Francis Drake Off-Ramp	1,211	1,700	1,970
Sir Francis Drake On-Ramp	2,335	2,780	3,050
Fifer On-Ramp	287	290	310
Wornum Off-Ramp ¹	--		740
Madera Off-Ramp	234	530	280
Madera On-Ramp	233	270	240
Tamalpais Off-Ramp	979	1,440	1,470
Tamalpais On-Ramp	718	1,030	1,100
Notes:			
1. Wornum Drive off-ramp does not exist in existing and no-build scenarios			
Source: Fehr & Peers, August 2010			

**TABLE 3
PM PEAK HOUR MAINLINE SEGMENT AND RAMP VOLUMES**

Northbound US-101			
Segment / Ramp	Existing	No-Build	Proposed Project
<i>Mainlines</i>			
Between Edge of study area and Tamalpais Drive	6,358	8,350	8,350
Between Tamalpais Drive and Industrial Way / Wornum Drive	6,068	7,930	8,090
Sir Francis Drake Interchange (across Corte Madera Creek)	4,069	5,690	5,980
Between Sir Francis Drake and I-580 Off-Ramp	5,459	7,200	7,200
<i>Ramps</i>			
Tamalpais Off-Ramp	1,291	1,840	1,670
Tamalpais On-Ramp	1,007	1,420	1,410
Industrial / Wornum Off-Ramp	88	100	300
Wornum On-Ramp	N/A	N/A	600
Sir Francis Drake Off-Ramp	2,965	3,750	3,460
Sir Francis Drake On-Ramp	1,390	1,520	1,220
Southbound US-101			
Segment / Ramp	Existing	No-Build	Proposed Project
<i>Mainlines</i>			
Anderson Drive On-Ramp and Sir Francis Drake	4,452	6,850	6,850
Sir Francis Drake Interchange (across Corte Madera Creek)	3,651	5,880	5,710
Between Fifer/Wornum and Madera	5,429	7,960	7,750
Between Madera and Tamalpais	5,333	7,690	7,610
Between Tamalpais and Edge of study area	5,052	7,370	7,370
<i>Ramps</i>			
Sir Francis Drake Off-Ramp	801	980	1,150
Sir Francis Drake On-Ramp	2,152	2,710	2,880
Fifer On-Ramp	222	230	230
Wornum Off-Ramp	--		470
Madera Off-Ramp	361	500	380
Madera On-Ramp	265	280	230
Tamalpais Off-Ramp	944	1,110	1,080
Tamalpais On-Ramp	666	800	820
Notes: 1. Wornum Drive off-ramp does not exist in existing and no-build scenarios Source: Fehr & Peers, August 2010			

[illegible]

1. Light truck refers to trucks up to 30 feet in length; i.e., UPS delivery truck
2. Heavy truck refers to trucks up to 60 feet in length; i.e., tractor trailer
3. HOV comprised of proportional SUV's/vans/trucks, sports cars, and vehicle fleet percentages

Source: Fehr & Peers, August 2010